



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/621,746

07/16/2003

Weiguang Qiu

AME-007

1811

22888

7590

06/25/2004

BEVER HOFFMAN & HARMS, LLP
TRI-VALLEY OFFICE
1432 CONCANNON BLVD., BLDG. G
LIVERMORE, CA 94550

EXAMINER

TRAN, THUY V

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 06/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Applicant(s)	mm	
	10/621,746	QIU, WEIGUANG	
	Examiner	Art Unit	
	Thuy V. Tran	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/24/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is a response to the Applicant' filing on July 16th, 2003. In virtue of this filing, claims 1-9 are currently presented in the instant application.

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on November 24th, 2003 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings Accepted

2. The drawings submitted on July 16th 2003 are accepted.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Gray (Pub. No.: US 2003/0160574 A1).

With respect to claim 1, Gray discloses, in Fig. 2A, a system and a method for optimizing performance of a cold cathode fluorescent lamp (CCFL) circuit, wherein the CCFL circuit includes a CCFL [110] and a piezoelectric transformer [108] for driving the CCFL [110]; the

Art Unit: 2821

method comprises providing (via output driver [201]) a driving waveform to the CCFL circuit (see paragraph [0046], line 14), wherein (i) a frequency of the driving waveform is based on a linearly translated input voltage (via second loop including [230], 216, 217; see paragraph [0046], lines 10-17), and (ii) a duty cycle of the driving waveform (performed by feedback loop [118] and circuit [233]) is based on a detected current through the CCFL (which is proportional to the voltage across resistor [113]; see paragraph [0049], lines 2-3).

With respect to claim 2, Gray discloses that the linearly translated input voltage (which is provided by [230, 216, 217] to VCO [220]) is based on characteristics of the PZT in the CCFL circuit.

With respect to claim 3, Gray discloses that the linearly translated input voltage is based on a potential input voltage range (which is VR2) for the CCFL circuit.

With respect to claim 4, Gray discloses that providing the driving waveform includes turning on/off transistors of a half-bridge [104, 105] in the CCFL circuit.

With respect to claim 5, Gray discloses, in Fig. 2A, a system and a method for optimizing performance of a cold cathode fluorescent lamp (CCFL) circuit, wherein the CCFL circuit includes a CCFL [110] and a piezoelectric transformer [108] for driving the CCFL [110]; the method comprises (1), before operation of the CCFL circuit, determining a frequency of a driving waveform to the CCFL circuit (based on a linearly translated input voltage, performed via second loop including [230], 216, 217; see paragraph [0046], lines 10-17), wherein (i) the frequency is based on a range of input source voltages and a range of desired linearly translated voltages associated with the PZT, and (2), during operation of the CCFL circuit, adjusting a duty

Art Unit: 2821

cycle of the driving waveform based on a detected current through the CCFL (which is proportional to the voltage across resistor [113]; see paragraph [0049], lines 2-3).

With respect to claim 6, Gray discloses, in Fig. 2A, a system for optimizing performance of a cold cathode fluorescent lamp (CCFL) circuit, wherein the CCFL circuit includes a CCFL [110] and a piezoelectric transformer [108] for driving the CCFL [110]; the system comprises (1) means [230, 216, 217, 220, 223, 224] for determining a frequency of a driving waveform for the CCFL circuit, wherein the frequency is based on a range of input source voltages and a range of desired linearly translated voltages associated with the PZT, and (2) means [118, 233] for adjusting a duty cycle of the driving waveform based on a detected current through the CCFL (which is proportional to the voltage across resistor [113]; see paragraph [0049], lines 2-3).

With respect to claim 7, Gray discloses, in Fig. 2A, that the means for determining the frequency of the driving waveform includes (1) a first resistor [216] coupled between a node [N6] and a high voltage source, wherein the high voltage source is one voltage in the range of input source voltages, (2) a second resistor [217] coupled between the node and a low voltage source, (3) an error amplifier [213] having a positive input terminal connected to a reference voltage [VR2] and a negative input terminal, and (4) a third resistor [215] coupled to the node, the negative input terminal of the error amplifier, and an output terminal of the error amplifier.

With respect to claim 8, Gray discloses, in Fig. 2A, a linear voltage translator comprising (1) a first resistor [216] coupled between a node [N6] and a high voltage source, wherein the high voltage source is one voltage in the range of input source voltages, (2) a second resistor [217] coupled between the node and a low voltage source, (3) an error amplifier [230] having a positive input terminal connected to a reference voltage [VR2] and a negative input terminal, and

Art Unit: 2821

(4) a third resistor [215] coupled to the node, the negative input terminal of the error amplifier, and an output terminal of the error amplifier.

With respect to claim 9, Gray discloses, in Fig. 2A, that the output terminal of the error amplifier provides a signal [VCO_CONTROL] to a voltage controlled oscillator (VCO) [220] to determine an output frequency of the VCO.

Citation of relevant prior art

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Prior art Nakatsuka et al. (Pub. No.: US 2002/0121865 A1) discloses a drive circuit and method for driving a CCFL.

Prior art Weindorf (U.S. Patent No. 6,690,121) discloses a lamp brightness control circuit for driving a CCFL.

Prior art Nakatsuka et al. (U.S. Patent No. 6,566,821) discloses a drive device and method for driving a CCFL.

Prior art Fujimura et al. (U.S. Patent No. 6,239,558) discloses a system for driving a CCFL.

Prior art Vaughn (U.S. Patent No. 6,016,052) discloses a pulse frequency modulation drive circuit for piezoelectric transformer.

Prior art Sasaki et al. (U.S. Patent No. 5,923,542) discloses a method and apparatus for driving piezoelectric transformer.

Art Unit: 2821

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy V. Tran whose telephone number is (571) 272-1828. The examiner can normally be reached on M-F (8:00 AM -5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thuy V. Tran
Examiner
Art Unit 2821

T.T.
06/22/04

A handwritten signature in black ink, appearing to read 'Thuy V. Tran', is written over the printed name and title.